



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,096	01/24/2002	Kevin R. Boyle	GB 010021	9447
65913	7590	07/29/2008		
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER PAN, YUWEN	
			ART UNIT 2618	PAPER NUMBER
			NOTIFICATION DATE 07/29/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/056,096	<b>Applicant(s)</b> BOYLE ET AL.	
	<b>Examiner</b> YUWEN PAN	<b>Art Unit</b> 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### ***Response to Arguments***

1. Applicant's arguments, see applicant's remarks, filed on 4/08/08, with respect to the rejection(s) of claim(s) 9 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Lindmark (US006054953A, hereinafter "Lindmark") and Hines (U.S. Patent No. 4,980,694, hereinafter Hines).

### ***Double Patenting***

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 2-9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2-9, 19-21 of copending Application No. 09/912, 470 (hereinafter '470) in view of Lindmark and Hines. '470 claims a wireless terminal comprising a ground conductor and a transceiver coupled to an antenna feed, wherein the antenna feed is coupled directly to the ground conductor via a capacitor formed by a conducting

Art Unit: 2618

plate and a portion of the ground conductor and a slot is provided in the ground conductor. '470 does not claim that the slot on the ground conductor is folded and is partially located underneath a conducting plate and there is a further slot on the ground conductor. Lindmark teaches that the slot on the ground conductor is partially located underneath a conducting plate and there is a further slot on the ground conductor (see figure 1 and items 4, 5a, 5b, and 1, 2, 3, see column 2 and lines 14-24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Lindmark with '470 to provide antenna that is fitted in mobile terminal capable of operating in two or more separate frequency band. Hines teaches the slot is folded (see column 5 and lines 52-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching Hines with '470 to improve the utilization of space within the antenna.

This is a provisional obviousness-type double patenting rejection.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 11-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. With respect to claim 11 and 19, both claims contain claim language of that the slot is arranged to shunt inductance at the antenna feed. The closest description found in the

Art Unit: 2618

specification is in paragraph 0037. Under this paragraph, there is no disclosure of arranging the slot to be shunt inductance at the antenna feed. The dependent claims of 11 and 19 are also rejected by the aforementioned reason.

6. Claims 11-21 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The forming of a shunt inductance at the antenna feed by the slot in which is due to the excitation of the capacitor in which excites a transmission line mode in the slot is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). In paragraph 0037 of the instant application:

The slot presents a high impedance to the coupling capacitor, thereby enabling a good match to 50 .OMEGA.. It is believed that the capacitor excites a transmission line mode in the slot 912 that acts as a shunt inductance at the antenna feed, which acts to match the response.

The slot can not act as a shunt inductance at the antenna feed without the excitation of the capacitor. Therefore, claims 11-21 is rejection under 35 USC 102 as be omitting the essential or critical elements to the practice of the invention.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2618

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4, 6,-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murch et al (US005764190A, hereinafter Murch) in view of Lindmark.

Per claims 4, 9, Murch et al discloses a wireless terminal (see figure 1) comprising a ground conductor (see figure 2 and item 6) and a transceiver coupled to an antenna feed (see item 7), wherein the antenna feed is coupled directly to the ground conductor via a capacitor formed by a conducting plate (see item 9) separate from and opposed to a portion of the ground conductor and wherein the ground conductor serves as a primary radiator (see column 3 and lines 8-28, in which the ground conductor comprises the casing of the handset as radiator). Murch does not teach a slot is partially located underneath the conducting plate, is provided in the ground conductor. Lindmark teaches that the slot on the ground conductor is partially located underneath a conducting plate, and there is a further slot on the ground conductor (see figure 1 and items 4, 5a, 5b, and 1, 2, 3, see column 2 and lines 14-24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Lindmark to provide antenna that is fitted in mobile terminal capable of operating in two or more separate frequency band and reduce the size of antenna in which is well known in the art for utilizing slot in antenna design.

Per claim 6, Murch further teach that the ground conductor is a handset case (see column 3 and lines 8-15).

Per claim 7, Murch further teaches that the ground conductor is a printed circuit board ground plane (figures 2 and 3).

Per claim 8, Murch further teaches that a matching network is provided between the transceiver and the antenna feed (see figure 8 and column 4 and lines 18-25).

9. Claims 2, 3, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murch and Lindmark as applied to claim 1 above, and further in view of Engblom et al (US006002367A).

Per claim 2, combination of Murch and Lindmark doesn't teach that slot is parallel to the major axis of the terminal. Engblom further teaches that slot is parallel to the major axis of the terminal (see figure 1). Engblom teaches that a slot is provided in the ground conductor (see figure 10B and item 5, column 2 and lines 52-53). It would have been obvious to one ordinary skill in the art at the time the invention was made to combine the teaching of Murch with Nghiem's device such that it would improve the increasing bandwidth and matching feature.

Per claim 3, Engblom further teaches that slot is folded (see figure 10B and item 5).

Per claim 5, Engblom further teaches that the conducting plate is asymmetrical with respect to the major axis of the ground conductor (see figure 10B).

***Allowable Subject Matter***

Art Unit: 2618

10. Claims 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YUWEN PAN whose telephone number is (571)272-7855. The examiner can normally be reached on 8-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anderson D. Matthew can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yuwen Pan/  
Primary Examiner, Art Unit 2618